

6th International Conference on Intercultural Education “Education and Health: From a transcultural perspective”

Self-confidence, perception of ability and satisfaction of the basic psychological need of competence in training stages

Fernando Claver Rabaz ^{a*}, R. Jiménez Castuera^a, A. Gil Arias^a, C. Fernández Echeverría^a, M. P. Moreno Arroyo^a

^a University of Extremadura, Faculty of Sport Sciences, Avda Universidad s/n, 10003, Cáceres (Spain)

Abstract

The main objective of this study was to identify differences in self-confidence, perception of ability and perceived need of competence between winner and loser teams of young volleyball players. The study sample was composed of 173 Under-16 (M: 14.63, SD: 1.05) participants (74 males, 99 females). The T-test for independent samples showed statistically significant differences in self-confidence ($F_{1,171}=3.95$; $p=.048$; $\eta^2=.023$), incremental perception of ability ($F_{1,171}=10.28$; $p=.002$; $\eta^2=.890$) and perceived competence ($F_{1,171}=5.451$; $p<.001$; $\eta^2=.954$) between players from winner and loser teams. Our results are supported by previous studies that showed highest values in winner teams than in loser teams.

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Selection and peer-review under responsibility of HUM-665 Research Group “Research and Evaluation in Intercultural Education”.

Keywords: psychological skills, match result, training categories, volleyball.

1. Introduction

The importance of psychological skills to sports is well documented in the sport psychology literature (Williams & Krane, 1998). Few studies have attempted to provide indicators of team performance through the comparison of winner and loser teams in different sports (Hunter & O'Donoghue, 2001; Jones et al., 2004), including psychological variables like anxiety or motivation.

Although the relationship between anxiety and performance in sport has received considerable research attention findings have been equivocal (Kais & Raudsepp, 2004). According to Multidimensional Anxiety Theory (Martens, Vealey, & Burton, 1990) self-confidence, “the belief or degree of certainty that individuals possess about their ability to succeed in the sport” (Vealey, 1992, 222), is hypothesized to have a positive linear relationship with performance.

In contemporary approaches of competence motivation, implicit theories of ability were believed as important constructs in understanding and predicting achievement related cognition, affect, and behavior. In this sense, the Conceptions of the Nature of Athletic Ability Questionnaire-2 (CNAAQ-2), proposed by Biddle et al. (2003) would be the widely used instruments in assessing implicit theories of sport competence and have made substantial contributions in theoretical and empirical development

* Corresponding author: Tel.: +34666066983; fax: +34927257461.

E-mail address: fclaver@unex.es

(Chiung-Huang Li, 2012). Incremental perceived ability refers to beliefs that people have about whether certain human attributes could be changed by training (Moreno-Murcia et al., 2013).

Self-Determination Theory (SDT; Deci & Ryan, 2002, 2008) represents one theoretical approach through which insight into the mechanisms responsible for sports motivation. One component of the SDT framework is Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2002) which posits the existence of innate psychological needs for competence, autonomy and relatedness (Mack et al., 2011). Psychological basic need of competence implies that individuals have a desire to interact effectively with the environment, to experience a sense of competence by producing desired outcomes and prevent undesired events (Edmunds, Ntoumanis & Duda, 2008).

The main objective of this study was to identify differences in self-confidence, perception of ability and perceived competence between winner and loser teams in young volleyball players.

2. Method

2.1. Participants

The study sample was composed of 173 participants (74 males, 99 females) belonging to the Under-16 teams (age: M: 14.63, SD: 1.05) from a Volleyball regional league (Extremadura, Spain). Participants belonged to each one of the 16 volleyball teams (8 male teams and 8 female teams) from this top-level Spanish regional league.

2.2. Measures

Match Result. The match result was carried out using the official statistics of the match. Two values were possible, winner and loser teams.

Self-confidence. The positive factor of the Competitive State Anxiety Inventory 2 (CSAI-2) by Martens, Burton, Vealey, Bump, & Smith (1990) was developed. The CSAI-2 was administered to the participants approximately one hour before the competition. An example of one of the items is "I'm confident about performing well". The Cronbach's alpha was .734.

Incremental ability. To measure perception of the nature of athletic ability the CNAAQ-2 (Biddle et al., 2003) was used. It was composed of six items, including phrases such "In sport, if you work hard, you improve your performance". The Cronbach's alpha was .779.

Basic psychological need of competence. To measure the satisfaction of the basic need of competence, this factor of the Motivational Mediators in Sport Scale (González-Cutre et al., 2007) was used. It was composed of seven items, e.g. "They allow me to take decisions". The Cronbach's alpha was .764.

2.3. Procedures

The main researcher was responsible for data collection, which occurred in the training places of the 16 teams participating in the research. To this end, we contacted the Volleyball Federation and all the teams' coaches. All players and their parents or guardians were fully informed about the study. They signed a consent form, as required by the Helsinki Declaration (2008). The protocol was fully approved by the Research Ethics Committee of the University of Extremadura (Spain).

2.4. Statistical Analysis

The SPSS 19.0 statistical program (SPSS Inc., Chicago, IL, USA) provided computer support for data analysis. Measures of asymmetry (Kurtosis and Kolmogorov-Smirnov with Lilliefors correction) were used to verify that the data distribution was normal. Consequently, the use of parametric statistics was proposed.

Initially, a descriptive analysis was carried out. It was based on the mean as the measure of central tendency, and standard deviation as the measure of dispersion. After that, we developed a T-Test to find the differences in the variables studied, according to the match result. The effect size was also calculated by means of the partial eta-squared (η^2) to know the extent of the differences found, because this eliminates the influence of the sample size. The power of the test was also calculated through statistical power ($SP=1-\beta$).

3. Results

Table 1. Descriptive and inferential analysis for match result as dependent variable

	N	M	SD	F(1,172)	η^2	p	SP
Self-confidence	Winner teams	1.522	.918	3.95	.023	.048	.507
	Loser teams	1.211	1.143				
Perceived ability	Winner teams	4.560	.482	13.408	.073	.002	.954
	Loser teams	4.270	.706				
Competence	Winner teams	4.059	.572	10.28	.057	<.001	.890
	Loser teams	3.699	.717				

The T-test for independent samples results (Table 1) showed statistically significant differences in self-confidence, incremental perception of ability, and perceived competence, between players from winner and loser teams. Players from winner teams showed higher values in all the studied variables than players from loser teams.

4. Discussion

The Multidimensional Anxiety Theory of Martens, et al. (1990) suggests that cognitive anxiety has a negative linear relationship with performance, but somatic anxiety has an inverted-U relationship, while self-confidence has a positive linear relationship with performance (Burton, 1988; Martens, et al., 1990). In this study, only self-confidence was measured. There were found significant differences in this variable, with values consistently higher in winner teams than in loser teams. Our results coincide with previous studies that found higher self-confidence scores in winner teams (Bejek & Hatvet, 1996; Tsopani et al., 2011). Humara (2009) said that the belief that one may successfully execute a specific activity (self-confidence) affect athletic performance. Kais and Raudsepp (2004) examined anxiety and self-confidence during athletic performance of 66 beach volleyball male athletes and self-confidence significantly predicted performance. Further, Tsopani et al., (2011) found differences in self-confidence between finalists and non-finalists, with higher scores showed by better athletes, the finalist.

Incremental perceived ability refers to beliefs that people have about whether certain human attributes could be changed (Moreno-Murcia et al., 2013). A great amount of research have shown that implicit belief of ability that people have affect their behavior (Biddle, Wang, Chatzisarantis, & Spray, 2003; Ommundsen, 2003; Ommundsen, Haugem, & Lund, 2005; Xiang, Lee & Shen, 2001). These studies showed that the belief that athletes have about their ability could be improved with effort, and it will improve their results. However, if the belief is that the skill is stable and therefore not dependent on the effort shown, leads in athletes frustration and motivation to achieve results not satisfactory (Moreno-Murcia, Cervelló-Gimeno, Martínez-Galindo, & Moreno, 2013). The results of this paper are supported by previous studies that showed highest values in winner teams in perceived ability. Moreno et al., (2010) found that experienced athletes belief that their ability could be changed, in contrast than non-experienced athletes, who though that it ability was stable.

The basic psychological need of competence implies that individuals have a desire to interact effectively with the environment, to experience a sense of competence by producing desired outcomes and preventing undesired events (Mack et al., 2011). The results of this research showed higher values of perceived competence in players from winner teams. A great number of studies have found a relationship between the basic psychological needs, motivation and sport performance. These studies also found differences in players' competence due to their performance (Gillet, Berjot, Vallerand, Amoura, & Rosnet, 2010). According to Fairclough (2003) the frequency or volume of participation in physical activity may be an important determinant of young people's perceived physical competence. Winner teams use to play more matches than loser teams (finals, playoffs). A prospective of this study is to analyze gender differences in volleyball formative players. In sport and physical activity contexts, gender differences in perceived competence have been observed consistently, with boys possessing more positive perceptions of their physical competence than girls (Carroll & Loumidis, 2001; Telama, 1998; Van Wersch, 1997).

Self-confidence, perception of ability and satisfaction of the basic psychological need of competence are shown in previous studies as important factors for players' performance. It would be interesting for coaches to take these variables into account because of their importance for the match result. Thus, they will improve performance of teams composed by players in formative stages. Thus, more studies in different categories are proposed.

Acknowledgements

This research was supported by grants from the Council of Work, Enterprise and Innovation (Extremadura Government) through the European Regional Development Fund.

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